ISEH - '86 ABSTRACT FORM

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PREFERENCE: ☒ Poster ☐ Platform

CHECK ONE: ☐ Clinical ☒ Non-clinical

CHECK THREE KEY AREAS:

BONE MARROW TRANSPLANTATION

- ☐ In malignancies
- ☐ In leukemia
- ☐ In aplastic anemia
- ☐ Autologous transplants
- ☐ Histocompatibility
- ☐ Gene therapy
- ☐ Immunosuppression
- ☐ GVHD
- ☐ Preparative regimens
- ☐ Stem cell purification
- ☐ Marrow purging
- ☐ Complications

DIFFERENTIATION

- ☐ Stem cells
- ☐ Extracellular matrix
- ☐ Erythropoiesis
- ☐ Cell:Cell interactions
- ☐ Differentiation antigens
- Granulocytopoiesis:
  - ☐ Neutrophils
  - ☐ Eosinophils
  - ☐ Basophils
- ☐ Megakaryocytes & platelets
- ☐ Gene action
- ☐ Lymphopoiesis
- ☐ Microenvironment/ stroma
- ☐ Monocytopoiesis

HEMOPOIETIC REGULATORY FACTORS

- ☒ Biochemical characterization
- ☐ Receptors
- ☐ Mechanism of action
- ☐ Production
- ☒ Inhibitors
- ☐ Poietins
- ☐ Growth factors

LYMPHOPOIESIS & LYMPHOCYTE FUNCTION

- ☐ Cytotoxic cells
- ☐ Immune deficiency disease
- ☐ Clonogenic progenitors
- ☐ Lymphopoietic regulatory factors

HEMATOLOGIC MALIGNANCIES

- ☐ Leukemia
- ☐ Lymphomas
- ☐ Myelomas
- ☐ Etiology
- ☐ Proliferation inducers
- ☐ Differentiation inducers
- ☐ Oncogenes
- ☐ Immunotherapy
- ☒ Experimental chemotherapy

MOLECULAR BIOLOGY

- ☐ Genes and gene products
- ☐ Molecular probes
- ☐ Monoclonal antibodies

PLURONIC F-68 PROTECTION OF RED CELL MEMBRANE INTEGRITY. McPherson, JC Jr*, Ward, DF*, Kirby, SG*, McPherson, JC III* (intro. by Felice, A). Medical College of Georgia, Augusta, and Dept Clin Invest, Eisenhower Army Med Ctr, Ft Gordon, GA.

Pluronic F-68 (F-68), a surfactant, has been used in i.v. fat emulsions and artificial blood emulsions as a co-emulsifying agent. In this study we have examined the effect of F-68 on the red blood cell (RBC) membrane in vitro. Because of its high molecular weight (8,350 g/M), aqueous solutions are hypotonic to RBC's. Solutions of 20, 10, 5, 2.5 and 1.25% wt/vol in distilled water were prepared (calculated mOsm: 24, 12, 6, 3, 1.5; measured mOsm: 600(?), 78, 17, 1, 0 by freezing point method). Five ml of each dilution of F-68 were mixed with 25 ul of whole rat blood (samples from 10 rats) and after 30 minutes, centrifuged, and the free hemoglobin measured in the supernatant at 540 nm (osmotic fragility test method, Brown, BA, Hematology, 4th ed, p 903, 1984). F-68 protected the cells from hypotonic hemolysis: 14, 20, 54, 73, 90% hemolysis, respectively. Protection of the RBC against mechanical trauma was evaluated by a modified mechanical fragility (MF) test by suspending the RBC's in 1% PBS (control) and in 1% F-68 in PBS. The MF in PBS was 50% hemolysis compared to 1.3% in F-68. Protection of the RBC membrane against thermal damage was evaluated by heating suspensions of rat RBC's in 1% PBS and in 10% F-68 in PBS (isotonic) for 20 minutes at 47° and 55°C. Osmotic fragility (OF) tests and MF tests were performed on these cooled suspensions. F-68 protected the cells against OF and MF (87% control vs 1.25% in F-68) at 47° but provided no protection at 55°C. F-68 probably exerts its effect by associating with the lipids and/or the proteins in the RBC membrane providing increased stability against stress on the membrane. F-68 may be useful in prolonging RBC life span in some clinical states.

CORRESPONDING AUTHOR:

Name. James C. McPherson, Jr.

Address Dept Surgery, Medical College of Georgia, Augusta, GA 30912

Signature of member sponsor .....

Presented by J. C. McPherson, Jr.

Airmail to: **Dr. Michael P. McGarry**
ISEH-'86
Roswell Park Memorial Institute
666 Elm Street
Buffalo, NY 14263 USA